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10/038,612	01/08/2002	Shmuel A. Ben-Sasson	BEN-SASSON3A	1282

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EXAMINER	
RUSSEL, JEFFREY E	
ART UNIT	**PAPER NUMBER**
1654	7

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/038,612	BEN-SASSON, SHMUEL A.	
	Examiner	Art Unit	
	Jeffrey E. Russel	1654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6,8-21 and 23-86* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *24,31-33,37-51 and 58-60* is/are allowed.

6)☒ Claim(s) *6,8-21,25,26,34,52,61-65 and 68-86* is/are rejected.

7)☒ Claim(s) *23,27-30,35,36 and 53-57* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 April 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

1. The disclosure is objected to because of the following informalities: The claim for priority under 35 U.S.C. 120 set forth at page 1, lines 4-6, of the specification is objected to because the filing date of the parent application is incorrect. The year of its filing should be 1998. Also, the status of the parent application should be updated. It is questioned as to whether paragraph 0011 of the specification should be deleted, as color drawings no longer appear to be present in the application. Appropriate correction is required.

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 77 and 84 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. There is no original disclosure supporting the method step of claim 77. The original disclosure does not recite producing peptides based upon the results of the activity assay of claim 61. Compare, e.g., pages 4 and 35-39 of the specification. Applicant has not indicated where the original disclosure supports the new claim limitation. For analogous reasons, claim 84 is not supported by the original disclosure of the invention.

3. Claims 6, 61-65, and 68-86 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 is unclear because the N-terminus of a peptide can not be amidated and the C-terminus of a peptide can not be acylated. It is possible that Applicants intended to claim acylation of the N-terminus and amidation of the C-terminus. The

terms "derivative" and "analogs" used in claims 61, 63, 64, 68, 78, 80, and 82 are indefinite because it is not clear what degree of structural and/or functional similarity a compound must share with a peptide or an amino acid in order for the compound to be deemed a peptide derivative or an amino acid analog. For example, it is not clear if a peptide derivative must itself be a peptide, or if an amino acid analog must itself be an amino acid. The terms are not defined either in the art or the specification. Note that while the specification at pages 14-16 provides examples of peptide derivatives and amino acid analogs, the use of the word "includes" indicates that examples and not definitions of the terms are being provided. Claim 68, part (a), and claim 78, part (i), recite a definition of an αD region peptide. This definition is comprised of three limitations: "a sequence of about 20 amino acid residues of the protein kinase Subdomain V and the beginning of Subdomain VI", "beginning at the end of the b5 sheet and extending through the D helix and the following loop to the beginning of helix E", and "which amino acids correspond to a continuous stretch of the prototypical PKA-Cα in positions 120-130 of the PKA-Cα". It is not clear if an αD region peptide must simultaneously satisfy all three limitations, or if the three limitations are alternatives to one another. Because this definition of the αD region peptide is unclear, all subsequent definitions which refer to it, e.g., the definitions of the subsequence peptide, of the modified sequence peptide, of the protected peptide, and of the cyclized peptide are also indefinite. These same issues arise in interpreting the scope of claims 80 and 82. Claim 78 is indefinite because it sets forth a method for identifying peptides which modulate the activity of a protein kinase. However, the definition of cyclized peptides in part (v) limits the cyclized peptides which can be tested to those which modulate the activity of the protein kinase. It is not clear why, when testing cyclized peptides, the claim should be limited to

cyclized peptides which modulate the activity of the protein kinase. It is not clear that Applicants intended to claim an assay which, with respect to the cyclized peptides, only confirms a known activity of the cyclized peptides.

4. Claims 25-30, 34-36, 55-57, 68, 75, 82, 83, 85, and 86 are objected to because of the following informalities: At claim 25, page 19 of the amendment filed February 20, 2003, line 12, "phenylalanine" is misspelled. At claim 28, page 21 of the amendment, line 18, "isoleucine" is misspelled, and "an" should be changed to "and". At claim 34, page 29, line 19, and page 32, line 7, "phenylalanine" is misspelled. At claim 34, page 33, line 11, "isoleucine" is misspelled. At claim 55, line 10, "methionine" is repeated in the same Markush group. At claim 68, page 63, line 3, and claim 82, page 68, line 1, "of" should be inserted after "peptide". Appropriate correction is required.

5. Claims 35, 36, 38, 39, 53, and 54 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 35 and 36 (SEQ ID NOS:55-59), claims 38 and 39 (SEQ ID NOS:51-54), and claims 53 and 54 (SEQ ID NO:70) recite sequences which are larger than the sequences permitted in the independent claims upon which they depend.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

For the purposes of this invention, the level of ordinary skill in the art is deemed to be at least that level of skill demonstrated by the patents in the relevant art. Joy Technologies Inc. v. Quigg, 14 USPQ2d 1432 (DC DC 1990). One of ordinary skill in the art is held accountable not only for specific teachings of references, but also for inferences which those skilled in the art may reasonably be expected to draw. In re Hoeschele, 160 USPQ 809, 811 (CCPA 1969). In addition, one of ordinary skill in the art is motivated by economics to depart from the prior art to reduce costs consistent with desired product properties. In re Clinton, 188 USPQ 365, 367 (CCPA 1976); In re Thompson, 192 USPQ 275, 277 (CCPA 1976).

7. Claims 63, 64, 80, and 82 are rejected under 35 U.S.C. 102(b) as being anticipated by the WO Patent Application '411. The WO Patent Application '411 teaches peptides comprising SEQ ID NOS:8 (which comprises QNSSE), 34 (which comprises NNSSE), 37 (which comprises DNSSE), and 40 (which comprises QASSE). The peptides can be bound to a solid support and used to remove ligands from a mixture. The peptides are also administered to patients. See, e.g., page 7, lines 14-24, and claims 6 and 18. These subsequences correspond to the subsequence AA_{29}-AA_{33} of Applicant's claim 34. In view of the similarity in structure between the WO Patent Application '411's peptides and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Removal of ligands with the peptides of the WO Patent

Application '411 from a mixture containing the ligands constitutes detecting the existence of the ligand in the mixture as well as the presence of a ligand-peptide binding pair. Because the same peptides are being administered to the same patients in the WO Patent Application '411 and Applicant's claimed method, inherently the activity of a protein kinase in the patient will be modulated in the WO Patent Application '411 to the same extent claimed by Applicant. Note that claims 80 and 82, part (iii) of each claim, have no upper limit as to the number of residues which can be substituted.

8. Claims 63 and 80 are rejected under 35 U.S.C. 102(b) as being anticipated by Kahn. Kahn teaches a peptide of SEQ ID NO:10 (see column 20, Table 3) which comprises the subsequence MMNGG. The subsequence corresponds to the subsequence AA_3-AA_7 of Applicant's claim 25, and corresponds to the subsequence of residues 3-7 of Applicant's SEQ ID NOS:18-22 in which residue 3 varies. The peptide is to be covalently attached to a conformationally constrained reverse turn mimetic and administered to warm-blooded mammals. See, e.g., the Abstract and columns 4-6. When the peptide is covalently attached to the mimetic, the resultant compound will constitute a cyclic peptide. In view of the similarity in structure between the peptide and the peptide covalently attached to the mimetic of Kahn and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Because the same peptide is being administered to the same patients in Kahn and Applicant's claimed method, inherently the activity of a protein kinase in the patient will be modulated in Kahn to the same extent claimed by Applicant. Note that claim 80, part (iii), has no upper limit as to the number of residues which can be substituted.

9. Claims 63 and 80 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumar et al. Kumar et al teach the peptide Pep-14 (see column 8, Table 1) which comprises the subsequence SYLDK and which is cyclized through disulfide bonds. This subsequence corresponds to the subsequence AA_{10}-AA_{14} of Applicant's claim 28, and corresponds to the subsequence of residues 10-14 of Applicant's SEQ ID NOS:36-37 in which residue 10 varies. The peptide is administered to warm-blooded animals. See, e.g., column 1, lines 41-44, and column 3, lines 10-12 and 16-18. In view of the similarity in structure between the peptide of Kumar et al and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Because the same peptide is being administered to the same patients in Kumar et al and Applicant's claimed method, inherently the activity of a protein kinase in the patient will be modulated in Kumar et al to the same extent claimed by Applicant. Note that claim 80, part (iii), has no upper limit as to the number of residues which can be substituted.

10. Claims 8-21, 63, 64, 68, 73, 74, and 80-83 are rejected under 35 U.S.C. 102(b) as being anticipated by Comoglio et al. Comoglio et al teach the peptide SEQ ID NO:10 which comprises the subsequence HGTLLD. This subsequence corresponds to the subsequence AA_6-AA_{11} of Applicant's claim 31. Comoglio et al's peptide also comprises the subsequence GTLLD which corresponds to the subsequence of residues 7-11 of Applicant's SEQ ID NO:38 in which residue 8 varies. Comoglio et al also teach the peptide SEQ ID NO:11 which comprises the subsequence YMKHGDL. This subsequence corresponds to the subsequence AA_3-AA_9 of Applicant's claim 52 and also corresponds to the subsequence of residues 3-9 of Applicant's SEQ ID NOS:68-70. The peptides are administered to mammals. See, e.g., the table at columns 5-6, and column 8,

lines 19-37. With respect to claims 68, 81, and 83, Comoglio et al's peptide of SEQ ID NO:10 corresponds to Applicant's modified sequence peptide in which the first and last amino acid residues of Comoglio et al's peptide of SEQ ID NO:10 correspond to substituted amino acid residues or amino acid residue analogs. With respect to claims 68, 81, and 83, Comoglio et al's peptide of SEQ ID NO:11 corresponds to Applicant's modified sequence peptide in which the last amino acid residue of Comoglio et al's peptide of SEQ ID NO:11 corresponds to a substituted amino acid residue or amino acid residue analog. In view of the similarity in structure between the peptides of Comoglio et al and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptides of Comoglio et al and Applicant's claimed peptides to shift the burden to Applicants to provide evidence that their claimed invention is unobviously different than the peptides of Comoglio et al. Because the same peptides are being administered to the same patients in Comoglio et al and Applicant's claimed method, inherently the activity of a protein kinase in the patient will be modulated in Comoglio et al to the same extent claimed by Applicant. See, e.g., Figure 1; column 8, lines 40-52; and column 16, line 25 - column 17, line 17. The determination that a particular peptide prevented p85 binding to the HGF/SF receptor corresponds to Applicant's claimed step of detecting ligand (i.e. p85)-peptide binding. Note that claims 80 and 82, part (iii) of each claim, have no upper limit as to the number of residues which can be substituted.

11. Claims 63 and 80 are rejected under 35 U.S.C. 102(e) as being anticipated by Binger et al. Binger et al teach the peptide SEQ ID NO:14 which comprises the subsequence GKGNLVD.

This subsequence corresponds to the subsequence AA_5-AA_{11} of Applicant's claim 31. Binger et al's peptide also comprises the subsequence GNLVD which corresponds to the subsequence of residues 7-11 of Applicant's SEQ ID NO:44 in which residue 8 varies. The peptide is administered to mammals. See, e.g., column 6, lines 52-58; column 7, line 7; and column 12, lines 55-59. In view of the similarity in structure between the peptide of Binger et al and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Because the same peptide is being administered to the same patients in Binger et al and Applicant's claimed method, inherently the activity of a protein kinase in the patient will be modulated in Binger et al to the same extent claimed by Applicant. Note that claim 80, part (iii), has no upper limit as to the number of residues which can be substituted.

12. Claims 63 and 80 are rejected under 35 U.S.C. 102(b) as being anticipated by the WO Patent Application '908. The WO Patent Application '908 teaches Peptide 34 which comprises the subsequence FLRSR. This subsequence corresponds to the subsequence AA_{12}-AA_{16} of Applicant's claim 31 and corresponds to the subsequence of residues 12-16 of Applicant's SEQ ID NO:46 in which residue 15 varies. The peptide and be C- and/or N-terminally modified, e.g., with amide and acetyl groups. The peptide is administered to mammals. See, e.g., page 7, lines 18-26; page 10, line 5; page 11, lines 3-4; and page 16, line 15 - page 17, line 5. In view of the similarity in structure between the peptide of the WO Patent Application '908 and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Because the same peptide is being administered to the same patients in the WO Patent Application '908 and Applicant's

claimed method, inherently the activity of a protein kinase in the patient will be modulated in the WO Patent Application '908 to the same extent claimed by Applicant. Note that claim 80, part (iii), has no upper limit as to the number of residues which can be substituted.

13. Claims 63 and 80 are rejected under 35 U.S.C. 102(b) as being anticipated by Weiner et al. Weiner et al teach the peptide SEQ ID NO:4 which comprises the subsequence GGDMR. This subsequence corresponds to the subsequence AA_6-AA_{10} of Applicant's claim 58 and also corresponds to the subsequence of residues 6-10 of Applicant's SEQ ID NOS:79 and 80 in which residue 9 varies. The peptide is administered as a vaccine to mammals. See, e.g., column 5, lines 59-64; column 6, line 1; and column 13, lines 17-31. In view of the similarity in structure between the peptide of Weiner et al and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Because the same peptide is being administered to the same patients in Weiner et al and Applicant's claimed method, inherently the activity of a protein kinase in the patient will be modulated in Weiner et al to the same extent claimed by Applicant. Note that claim 80, part (iii), has no upper limit as to the number of residues which can be substituted.

14. Claims 8-21 and 68-72 are rejected under 35 U.S.C. 102(a) as being anticipated by the WO Patent Application '017. The WO Patent Application '017 teaches a peptide Ryan No. 2 which consists of a sequence which corresponds to residues AA_4-AA_{24} of Applicant's claim 43 and which corresponds to residues 4-24 of Applicant's SEQ ID NO:82. The WO Patent Application '017's peptide also comprises the subsequence GDL, which corresponds to the subsequence of residues 7-9 of SEQ ID NOS:91 and 92. See page 38, Table 2. In view of the

similarity in structure between the peptide of the WO Patent Application '017 and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptide of the WO Patent Application '017 and Applicant's claimed peptides to shift the burden to Applicants to provide evidence that their claimed invention is unobviously different than the peptide of the WO Patent Application '017.

15. Claims 61, 78, and 79 are rejected under 35 U.S.C. 103(a) as being obvious over Hirth et al in view of Comoglio et al. Hirth et al teach a method for screening test compounds including peptides for their ability to modulate kinase activities. The test compound is incubated with a cell which the kinase and the kinase substrate. After incubation, the cell is lysed and phosphorylation of the substrate is determined. Hirth et al do not teach a test peptide which comprises a peptide derivative of the αD region of the protein kinase. Comoglio et al teach peptides which are potential kinase modulators and which comprise a peptide derivative of the αD region of the protein kinase (see the above rejection of claims 8-21, 63, 64, 68, 73, 74, and 80-83). It would have been obvious to one of ordinary skill in the art at the time Applicant's invention was made to use as the test compounds of Hirth et al the peptides of Comoglio et al because Hirth et al's screening method is applicable to peptides and because Comoglio et al disclose the desirability of testing their peptides for kinase modulating activity.

16. Claims 63 and 80 are rejected under 35 U.S.C. 102(e) as being anticipated by Hlavka et al. Hlavka et al teach the linear peptide of SEQ ID NO:6 and the cyclized peptide (I) which comprise the subsequence RKQVV. This subsequence corresponds to the subsequence AA_{14}-AA_{18} of Applicant's claim 46. The peptides are administered to mammals. See, e.g., column 5,

lines 10-14; column 18, lines 6-24; and Example 3. In view of the similarity in structure between the peptide of Hlavka et al and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Because the same peptide is being administered to the same patients in Hlavka et al and Applicant's claimed method, inherently the activity of a protein kinase in the patient will be modulated in Hlavka et al to the same extent claimed by Applicant. Note that claim 80, part (iii), has no upper limit as to the number of residues which can be substituted.

17. Claims 61, 62, 77, and 78 are rejected under 35 U.S.C. 102(e) as being anticipated by Conti-Fine. Conti-Fine teaches the linear peptide of SEQ ID NO:5 (see also column 2, lines 40-41, and claim 4) which comprises the subsequence LFQVV. This subsequence corresponds to the subsequence AA_9-AA_{13} of Applicant's claim 55. In view of the similarity in structure between the peptide of Conti-Fine and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Conti-Fine also incubates T cell lines, which inherently contain protein kinases, and determines their effect on the proliferation of the T cell lines. The peptides can be prepared in large quantities and high purity. See, e.g., 2, lines 54-61. Note that claim 78, part (iii), has no upper limit as to the number of residues which can be substituted.

18. Claims 6, 8-21, 68, 71, 75, 85, and 86 are rejected under 35 U.S.C. 102(b) as being anticipated by Holmes. Holmes teaches the linear peptide of SEQ ID NO:25 consisting of the sequence FLRRQ, acetylated on its amino terminus, and linked by an amide bond at its carboxyl terminus to a solid phase surface. See column 25, Table 2. This peptide corresponds to the

subsequence AA_{12}-AA_{16} of Applicant's claims 34, 46, and 49; differs by only two residues from the subsequence AA_{12}-AA_{16} of Applicant's SEQ ID NOS: 49, 50, and 58; and differs by only one residue from the subsequence AA_{12}-AA_{16} of Applicant's SEQ ID NO:86. Holmes' linear peptide corresponds to Applicants' protected subsequence of claim 68, part (d), and of claim s71 and 75. The acetyl group of Holmes' peptide corresponds to Applicant's at least one protecting group which facilitates transport of the peptide into a cell and which reduces the hydrophilicity and increases the lipophilicity of the peptide. In view of the similarity in structure between the peptide of Holmes and Applicant's claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptide of Holmes and Applicant's claimed peptides to shift the burden to Applicants to provide evidence that their claimed invention is unobviously different than the peptide of Holmes.

19. Claims 8-21, 63, 68, 71, 75, 85, and 86 are rejected under 35 U.S.C. 102(b) as being anticipated by Stuber et al. Stuber et al teach the linear peptides GPRPP-NH_2, GPRPS-NH_2, GPRPK-NH_2, GPRPD-NH_2, GPRPE-NH_2, GPRPS-NH(isopropyl), GPRPPR-NH_2, and GPRPPP-NH(isopropyl). The peptides are administered in vivo to inhibit fibrin-thrombin clotting. See column 1, lines 59-60; column 2, lines 12-13, 17-18, 20, and 24-25; and the claims. These peptides correspond to the subsequences AA_{27}-AA_{31} and/or AA_{27}-AA_{32} of Applicant's claims 34 and/or 37, and differ from the subsequence AA_{27}-AA_{31} of Applicant's SEQ ID NO:56 or from the subsequence AA_{27}-AA_{31} of Applicant's SEQ ID NO:54 by only one or two residues. In view of the similarity in structure between the peptides of Stuber et al and Applicant's claimed peptides, inherently the former would have been expected to modulate the activity of a protein

kinase to the same extent claimed by Applicant. Because the same peptides are being administered to the same patients in Stuber et al and Applicant's claimed method, inherently the activity of a protein kinase in the patient will be modulated in Stuber et al to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptides of Stuber et al and Applicant's disclosed and claimed peptides to shift the burden to Applicants to provide evidence that their claimed invention is unobviously different than the peptides of Stuber et al.

20. Claims 8-21, 63, 68, 71, 72, 80, and 81 are rejected under 35 U.S.C. 102(e) as being anticipated by Cooper, Jr. Cooper, Jr. teaches the linear peptide Gly-Ser-Ala-Phe-Phe. The peptide is administered in vivo to inhibit phagocyte activation. See column 3, lines 10-22 and 48-49. This peptide corresponds to the subsequence AA_{30}-AA_{34} of Applicant's claim 34. In view of the similarity in structure between the peptide of Cooper, Jr. and Applicant's claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Because the same peptides are being administered to the same patients in Cooper, Jr. and Applicant's claimed method, inherently the activity of a protein kinase in the patient will be modulated in Cooper, Jr. to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptide of Cooper, Jr. and Applicant's disclosed and claimed peptides to shift the burden to Applicants to provide evidence that their claimed invention is unobviously different than the peptide of Cooper, Jr.

21. Claims 8-21, 63, 68, 71, 72, 80, and 81 are rejected under 35 U.S.C. 102(e) as being anticipated by Andersen et al. Andersen et al teach the linear peptide Thr-Asp-Asn-Tyr-Thr.

The peptide is administered in vivo to treat or prevent multiple sclerosis. See, e.g., the claims. This peptide corresponds to the subsequence AA_{27}-AA_{31} of Applicant's claim 34. In view of the similarity in structure between the peptide of Andersen et al and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Because the same peptides are being administered to the same patients in Andersen et al and Applicant's claimed method, inherently the activity of a protein kinase in the patient will be modulated in Andersen et al to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptide of Andersen et al and Applicant's disclosed and claimed peptides to shift the burden to Applicants to provide evidence that their claimed invention is unobviously different than the peptide of Andersen et al.

22. Claims 8-21, 68, 71, 75, 85, and 86 are rejected under 35 U.S.C. 102(b) as being anticipated by Urry. Urry teaches the linear peptides Boc-Gly-Val-Gly-Ile-Pro-OBzl and Boc-Gly-Val-Gly-Ile-Pro-OH. See column 12, lines 50 and 59. These peptides correspond to the subsequence AA_{14}-AA_{18} of Applicant's claim 28. The Boc and OBzl groups of Urry's peptides correspond to Applicant's at least one protecting group which facilitates transport of the peptide into a cell and which reduces the hydrophilicity and increases the lipophilicity of the peptide. In view of the similarity in structure between the peptides of Urry and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptides of Urry and Applicant's disclosed and claimed

peptides to shift the burden to Applicants to provide evidence that their claimed invention is unobviously different than the peptides of Urry.

23. Claims 8-21, 68, 71, and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by the Petit text. The Pettit text teaches the pentapeptide penta-Gly, which corresponds to the subsequences AA_{15}-AA_{19} and AA_{16}-AA_{20} of Applicant's claim 31, and teaches the hexapeptide Gly_2-Ala_2-Gly_2, which corresponds to the subsequence AA_{15}-AA_{20} of Applicant's claim 31. See pages 212 and 223. In view of the similarity in structure between the peptides of the Pettit text and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptides of the Petit text and Applicant's disclosed and claimed peptides to shift the burden to Applicants to provide evidence that their claimed invention is unobviously different than the peptides of the Petit text.

24. Claims 8-21, 68, 73, and 74 are rejected under 35 U.S.C. 102(b) as being anticipated by the WO Patent Application '341. The WO Patent Application '341 teaches the peptide SEQ ID NO:55. This sequence corresponds to the subsequence AA_{24}-AA_{31} of Applicant's claim 34 with the Ala residue being a conservatively substituted functional amino acid analog of residue AA_{31}. In view of the similarity in structure between the peptide of the WO Patent Application '341 and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptides of the WO Patent Application '341 and Applicant's disclosed and claimed peptides to shift the burden to Applicant

to provide evidence that the claimed invention is unobviously different than the peptides of the WO Patent Application '341.

25. Claims 8-21, 34, 63-65, 68, 71, 76, and 80-83 are rejected under 35 U.S.C. 102(e) as being anticipated by Ruoslahti et al (U.S. Patent No. 6,232,287). Ruoslahti et al teach and claim the peptide VSFLEYR in linear or cyclic form (see, e.g., claims 20, 24, 26, and 37) which corresponds to the subsequence AA_{18}-AA_{24} of instant claim 34. In view of the similarity in structure between Ruoslahti et al's peptide and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptide of Ruoslahti et al and Applicant's disclosed and claimed peptides to shift the burden to Applicant to provide evidence that the claimed invention is unobviously different than the peptide of Ruoslahti et al. The peptide of Ruoslahti et al is administered as a conjugate in order to treat prostate pathology in a subject (see, e.g., claim 37). Because the same peptide is being administered to the same patient in Ruoslahti et al and Applicant's claimed method, inherently the activity of a protein kinase in the patient will be modulated in Ruoslahti et al to the same extent claimed by Applicant. With respect to claim 64, Ruoslahti et al teach using peptide to identify a target molecule in a sample which is bound by the peptide (see, e.g., column 28, lines 51-67, and claims 27 and 28). The target molecule of Ruoslahti et al corresponds to Applicant's ligand.

26. Claims 8-21, 25, 52, 68, 71, and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by Olexa et al (U.S. Patent No. 4,455,290). Olexa et al teach the peptide Gln-Ala-Gly-Asp-Val (see, e.g., claims 1 and 2), which corresponds to residues AA_5-AA_9 of Applicant's

claim 25 and to residues AA_{30}-AA_{34} of Applicant's claim 52. In view of the similarity in structure between Olexa et al's peptide and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptide of Olexa et al and Applicant's disclosed and claimed peptides to shift the burden to Applicant to provide evidence that the claimed invention is unobviously different than the peptide of Olexa et al.

27. Claims 8-21, 25, 26, 68, 71, and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by the Morelli et al article (J. Peptide Res., Vol. 49, pages 492-499). The Morelli et al article teaches the peptides VGVPG and VGAPG (see, e.g., the abstract), which correspond to residues AA_{16}-AA_{20} and to residues AA_{18}-AA_{22} of Applicant's claim 25. The peptides also have three of five residues in common with residues 16-20 of Applicant's SEQ ID NO:20 and 21. In view of the similarity in structure between the Morelli et al article's peptides and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptides of the Morelli et al article and Applicant's disclosed and claimed peptides to shift the burden to Applicant to provide evidence that the claimed invention is unobviously different than the peptides of the Morelli et al article.

28. Claims 8-21, 52, 68, 71, and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by the Zhou et al article (J. Exp. Med., Vol. 178, pages 1165-1174)). The Zhou et al article teaches the peptide KGAGDV (see, e.g., the abstract), which corresponds to residues AA_{29}-AA_{34} of Applicant's claim 52. In view of the similarity in structure between the Zhou et al article's

peptide and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptide of the Zhou et al article and Applicant's disclosed and claimed peptides to shift the burden to Applicant to provide evidence that the claimed invention is unobviously different than the peptide of the Zhou et al article.

29. Claims 8-21, 25, 68, 71, and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson et al (U.S. Patent No. 5,439,829). Anderson et al teach the peptide His-Trp-His-Met-Tyr (see, e.g., claim 8), which corresponds to residues AA_{10}-AA_{14} of Applicant's claim 25. In view of the similarity in structure between Anderson et al's peptide and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is deemed to be present between the peptide of Anderson et al and Applicant's disclosed and claimed peptides to shift the burden to Applicant to provide evidence that the claimed invention is unobviously different than the peptide of Anderson et al.

30. Claims 8-21, 52, 68, 71, and 72 are rejected under 35 U.S.C. 102(a) as being anticipated by the WO Patent Application 97/47314. The WO Patent Application '314 teaches the peptide Arg-Ala-Ala-Ala-Met-Val (see, e.g., pages 23 and 63, SEQ ID NO:70, and claim 25), which corresponds to residues AA_{29}-AA_{34} of Applicant's claim 52. In view of the similarity in structure between the WO Patent Application 314's peptide and Applicant's disclosed and claimed peptides, inherently the former would have been expected to modulate the activity of a protein kinase to the same extent claimed by Applicant. Sufficient evidence of similarity is

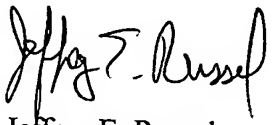
deemed to be present between the peptide of the WO Patent Application '314 and Applicant's disclosed and claimed peptides to shift the burden to Applicant to provide evidence that the claimed invention is unobviously different than the peptide of the WO Patent Application '314.

31. Claims 24, 31-33, 37-51, and 58-60 are allowed. Claims 23, 53, and 54 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 28-30 and 55-57 would be allowable if rewritten or amended to overcome the claim objections set forth in this Office action. Claim 27, 35, and 36 would be allowable if rewritten to overcome the claim objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

32. The examiner maintains his position for the reasons set forth during prosecution of the parent application.

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey E. Russel at telephone number (703) 308-3975. The examiner can normally be reached on Monday-Thursday from 8:30 A.M. to 6:00 P.M. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Brenda Brumback can be reached at (703) 306-3220. The fax number for Art Unit 1654 for formal communications is (703) 305-3014; for informal communications such as proposed amendments, the fax number (703) 746-5175 can be used. The telephone number for the Technology Center 1 receptionist is (703) 308-0196.



Jeffrey E. Russel
Primary Patent Examiner
Art Unit 1654

JRussel
April 15, 2003